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**Younger et al.**

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(54) **PHY BASED WAKE UP FROM LOW POWER MODE OPERATION**

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(58) **Field of Classification Search**  
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See application file for complete search history.

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(57) **ABSTRACT**

Apparatus and method for supplying electrical power to a device. A system on chip (SOC) integrated circuit includes a first region having a processing core and a second region characterized as an always on domain (AOD) power island having a power control block with an energy detector coupled to a host input line. First and second power supply modules respectively supply power to the first and second regions. The second power supply module includes a main switch between the first power supply module and a host input voltage terminal. The power control block opens the main switch to enter a low power mode during which no power is supplied to the first region, and the power control block closes the main switch to resume application of power to the first region responsive to the energy detector detecting electrical energy on the host input line.

**20 Claims, 5 Drawing Sheets**

